

LA-UR-18-21810

Approved for public release; distribution is unlimited.

Title: DiF - FiX Get Your Gut Back

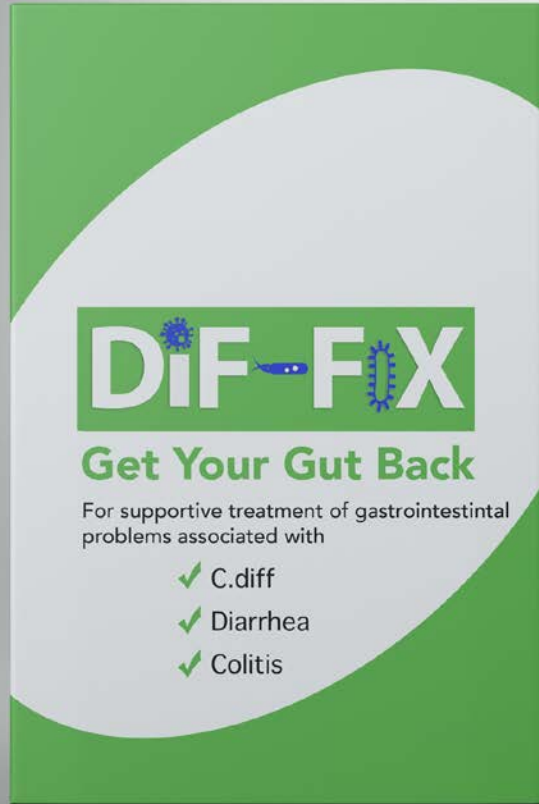
Author(s): Kumar, Anand

Intended for: Presentation

Issued: 2018-03-06

Disclaimer:

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the Los Alamos National Security, LLC for the National Nuclear Security Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396. By approving this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.



DiF-FoX

Get Your Gut Back

ANAND KUMAR

UC-LANL POSTDOC ENTREPRENEUR FELLOW

LANL DIRECTOR'S POSTDOC FELLOW

BIOSECURITY AND PUBLIC HEALTH

LOS ALAMOS NATIONAL LABORATORY

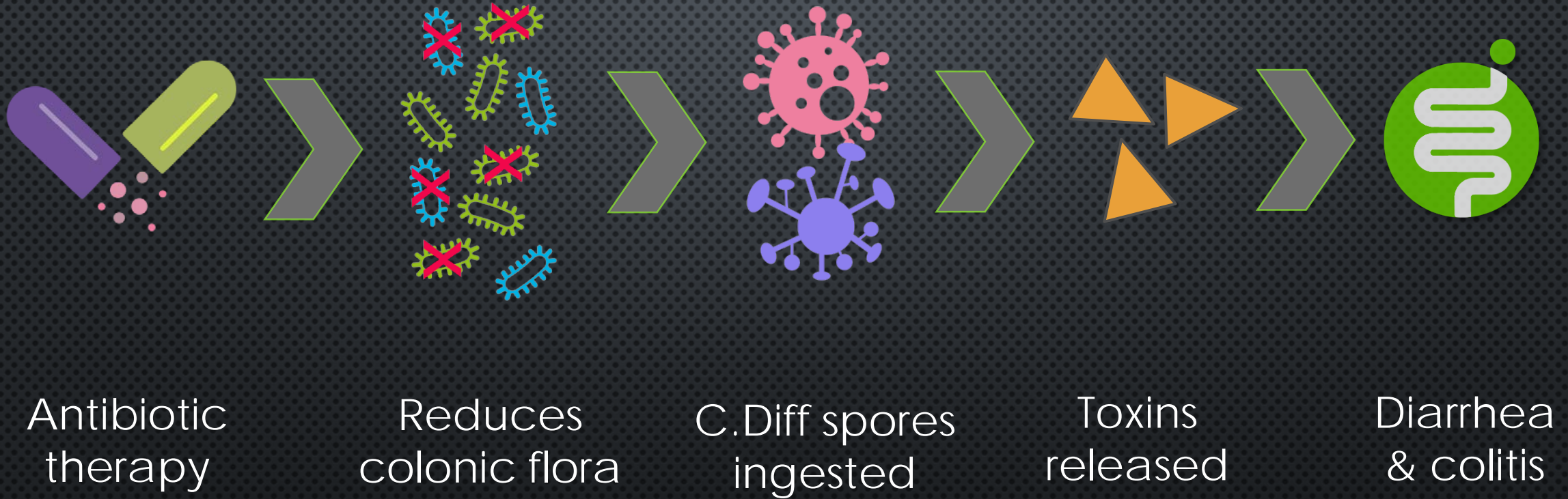


CLOSTRIDIUM

Difficile (C.diff)

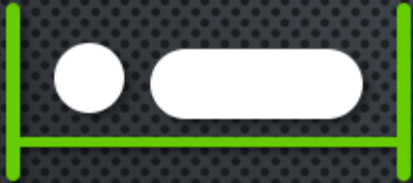
C. diff is a bacterium that causes diarrhea and serious intestinal conditions and is especially deadly to people over 65.

PATHOGENESIS OF C.DIFFICILE



PROBLEM

C. Diff is DEADLY & EXPENSIVE



500,000
cases per year



1 in 3
has a recurrence



30,000
deaths per year
1 out of 11 65+ years

40,000
direct costs



14 days
missed work/life



2013
listed as urgent threat



CURRENT RX : FECAL TRANSPLANT (FT)





Risks and Challenges with Fecal Transplants

- Transfer of pathogens & chronic infections
- Fecal transplant donors difficult to find, limiting universal application

DiF-FIX

Get Your Gut Back



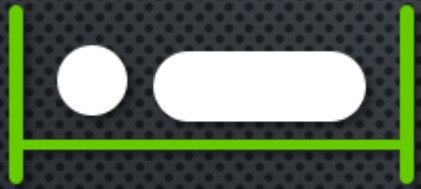
A safe universal **GUT MICROBIAL COCKTAIL** that replaces **FECAL TRANSPLANT PRACTICES** with a **PILL**

AN-HISCI PLATFORM

Anaerobic High-throughput Screening of Cell-to-Cell Interactions



US MARKET OPPORTUNITY



\$1.5B

Total Market
Diagnosed



\$750M

Total Addressable Market
High risk for recurrence



\$250M

Targeted Segment
Recurrence patients

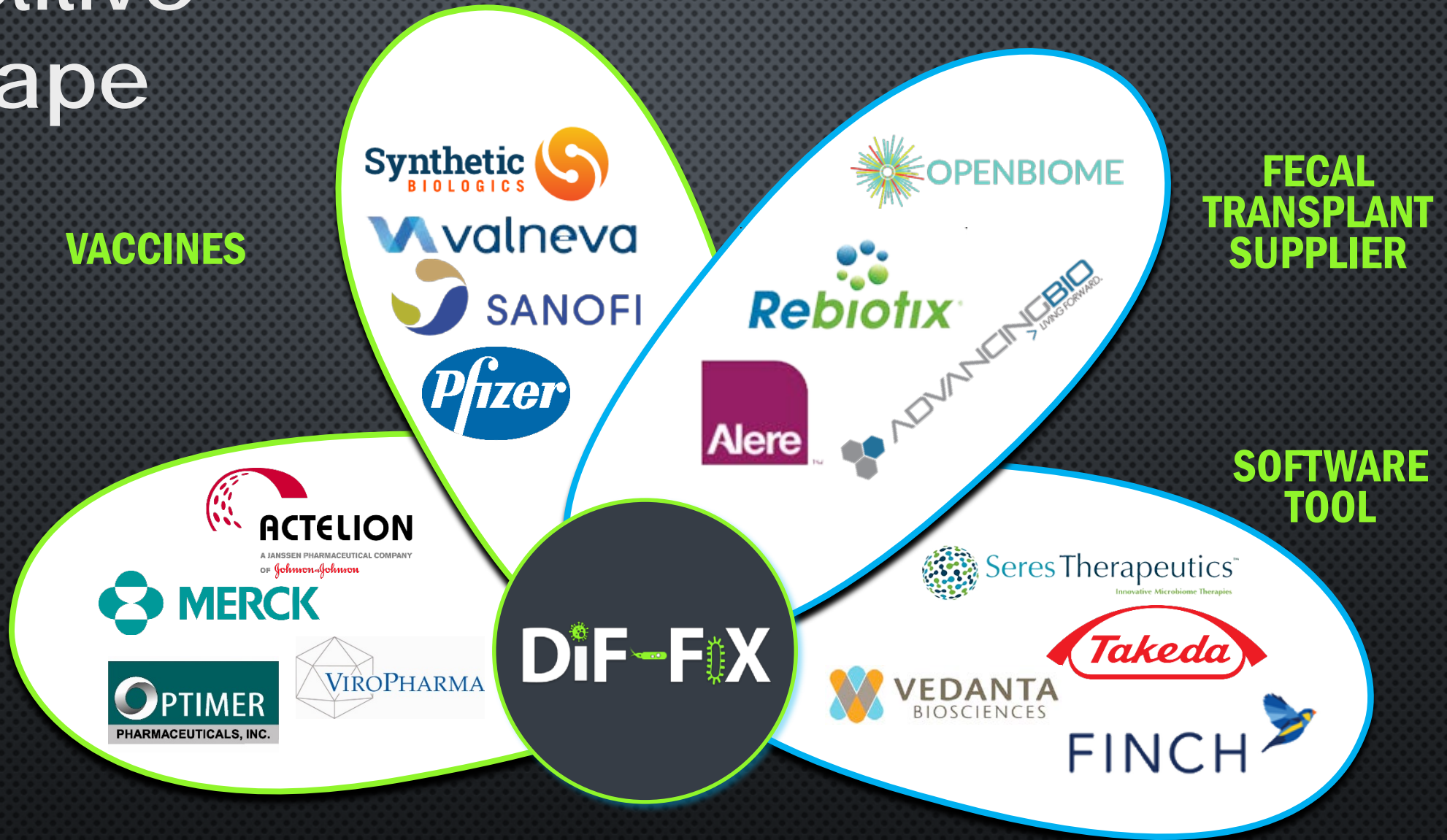
Competitive Landscape

ANTIBIOTICS

VACCINES

FECAL
TRANSPLANT
SUPPLIER

SOFTWARE
TOOL



Competitive Advantage



ANTIBIOTICS

VACCINES

FECAL TRANSPLANT

SOFTWARE

NON-
INVASIVE

LOW
RECURRENCE

LOW RISK OF
PATHOGENS

BASED ON
MICROBIAL
INTERACTIONS



VACCINES



ANTIBIOTICS



DiF-FIX

STANDALONE and
COMPLEMENTARY
Therapy with
VACCINES and
ANTIBIOTICS

BUSINESS MODEL OPTIONS

1

OVER THE COUNTER PROPHYLACTIC

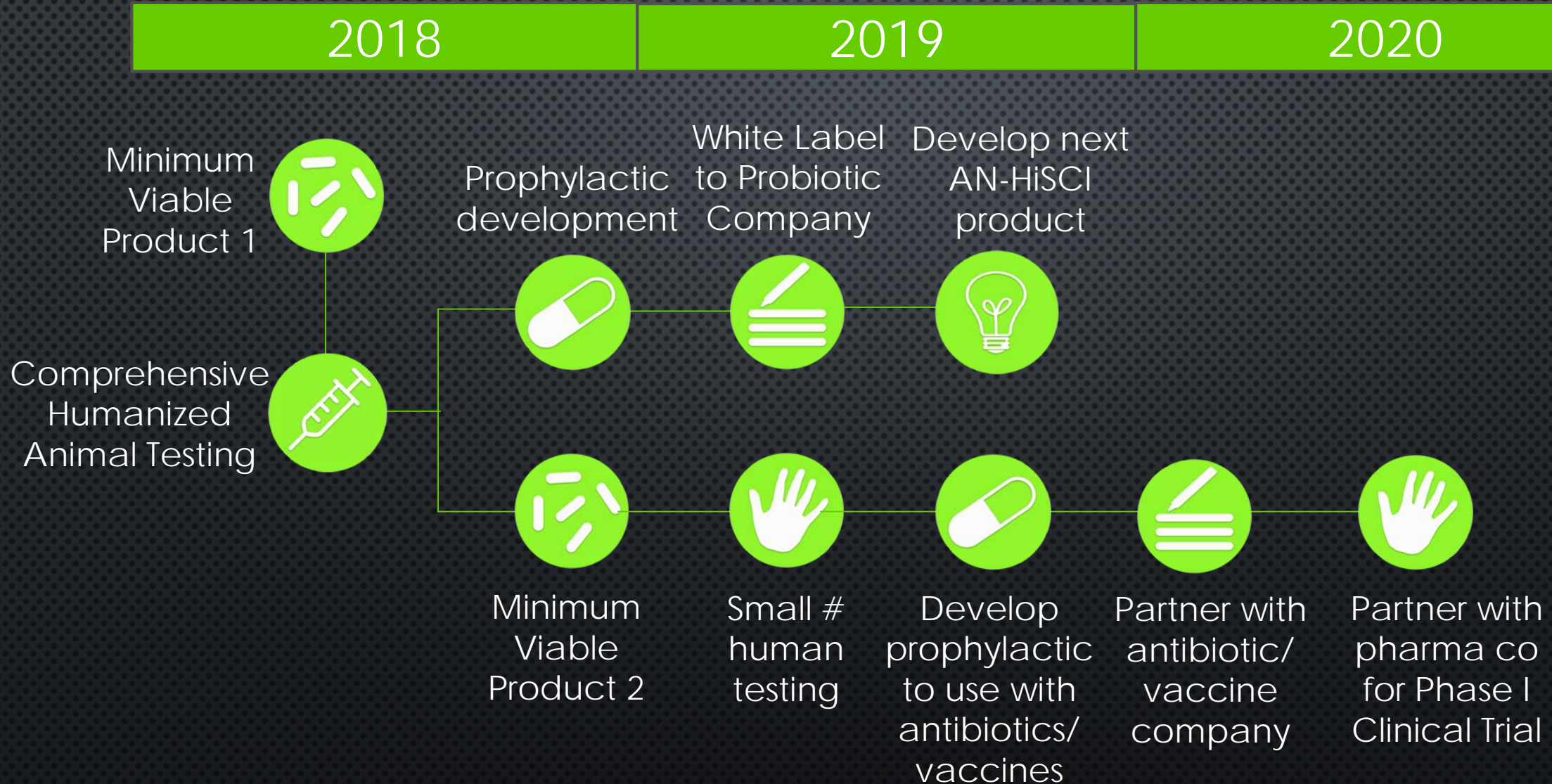
2

SUPPLEMENT TO ANTIBIOTIC/VACCINE

3

FDA APPROVED ANTI-C.DIFF PILL

GO TO MARKET



FUNDING NEEDS & DELIVERABLES

\$25K

Minimum Viable Product 1

\$250K

Comprehensive Humanized Animal Testing

\$500K

Prophylactic Development

\$775K

EXIT STRATEGIES

1

CRADA & LICENSE WITH PHARMACEUTICAL

2

ACQUISITION BY PROBIOTIC MANUFACTURER

3

ACQUISITION BY PHARMACEUTICAL